



A new species of *Poa* L. (Poaceae) from Kosciuszko National Park, New South Wales

Neville G. Walsh¹ & Keith L. McDougall²

¹ Royal Botanic Gardens Melbourne, Birdwood Avenue, South Yarra, Victoria 3141, Australia;
email: neville.walsh@rbg.vic.gov.au

² Office of Environment and Heritage, PO Box 733, Queanbeyan NSW 2620, Australia;
email: keith.mcdougall@environment.nsw.gov.au

Abstract

A new species of *Poa*, *P. mireniana* N.G.Walsh & K.L.McDougall sp. nov., currently known only from lower, western slopes in the Kosciuszko National Park near Talbingo is described and illustrated. Its known distribution, ecology and conservation status, and relationship with other members of the genus are discussed. Its stoloniferous habit and general appearance imply a close relationship to *P. tenera*, but it possesses some features that suggest this relationship may be superficial. The new species is characterised by an extensively rhizomatous and/or stoloniferous habit, short, flat to weakly folded leaf blades and a relatively long, membranous ligule.

Keywords: Taxonomy, *Poa tenera*, MIREN

Introduction

In the course of recent surveys of native and introduced plants on transects at increasing altitudes from foothills to the highest mountains in Australia (Kueffer et al. 2014), a distinctive, apparently undescribed *Poa* L. was encountered in steep mountain forests of generally south-western aspect between 900 and 1050 m altitude. The opportunity is taken here to describe this new species in the hope that further surveys in similar country may improve the understanding of the species.

Taxonomy

Poa mireniana N.G.Walsh & K.L.McDougall sp. nov.

Type: NEW SOUTH WALES. Kosciuszko National Park, c. 50 m below Snowy Mtn Hwy, 4 km direct E from Talbingo, 5.1.2018, *K. McDougall 1490* (holotype: MEL 2418238; isotypes: CANB, K, MELU, NSW, US — yet to be distributed).

In its general rhizomatous/stoloniferous habit, resembling *Poa tenera*, but differing from it in the broader, coarser and usually shorter leaves, the relatively long, membranous, tapered ligule, the conspicuous collar,

the slender, tardily expanded inflorescence and the spikelets which usually contain more numerous florets.

Slender rhizomatous and/or stoloniferous perennial. Leaves mostly cauline. Culms sometimes weakly scandent but ultimately erect, to c. 40 cm high, elliptic in section toward base, distinctly flattened for a few internodes below inflorescence, glabrous, or with a few hairs immediately below the nodes; nodes glabrous. New shoots intravaginal. Leaf sheaths not pigmented, rather prominently 5–9-nerved with or without finer parallel nerves between, glabrous or with scattered, spreading hairs near the sheath-blade junction; margins fused in the lower c. one-quarter, free above. Ligule conspicuous, membranous, 1.2–2(–3) mm long, tapered, rounded or obtuse, abaxially pilose with hairs to c. 0.3 mm long. Collar region conspicuous, yellowish, dilated and usually loosely folded near its junction with the ligule margin. Leaf blades green, not glaucous, usually flat or slightly folded in vivo, often inrolled on drying, 3–10 cm long, 1–3 mm wide when flattened, rather conspicuously 5–9-veined, abaxially scabrous along the larger veins or occasionally smooth, sometimes sparsely pilose with hairs to c. 0.3 mm long, adaxially sparsely to moderately pilose with fine spreading hairs to c. 0.5 mm long; tip acute, navicular. Inflorescence usually slender, remaining contracted, or finally the branches spreading, 3–11 cm long, 1–5 cm wide. Spikelets (2–)3–5-flowered, 2.7–4.5 mm long, basically green but glumes and florets with pale translucent margins, or the margins sometimes tinged purplish. Glumes, 1.7–2.5 mm long, the upper slightly longer than the lower, 3/4–1 × the length of the proximal lemma, acute, keel sparsely and shortly scabrous, intercostal regions smooth and scabrous. Lowest lemma c. 2.5 mm long, broadly acute in profile, 5-nerved, the midrib sparsely scaberulous toward apex, intercostal regions glabrous or sparsely pubescent toward base; web absent or weakly developed and then usually only on the lowest floret, to c. 0.5 mm long. Palea slightly shorter than its lemma, scabridulous along the keels at least in lower half. Anthers 0.7–1.3 mm long. (Figs 1–3).

Specimens examined: NEW SOUTH WALES. Snowy Mountains Highway, ca 6.5 km SE of Talbingo, 2.xii.2011, *K.McDougall* 1386 & *G. Wright* (MEL); Snow[y] Mountains Highway, ca 4.5 km ESE of Talbingo, 2.xii.2011, *K.McDougall*

1385 & *G. Wright* (MEL); Kosciuszko National Park, near Snowy Mtn Hwy, 4.5 km direct ESE from Talbingo, 4.x.2017, *N.G. Walsh* 8732, *K. McDougall* & *G. Wright*. Crown Land, 1 km SW of Batlow on road to Tumberumba, 30.v.1999, *N.M. Taws* 1015 (CANB, MEL, NSW).

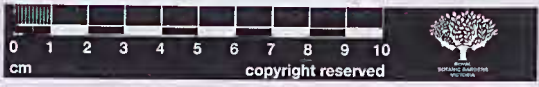
Distribution and habitat: *Poa mireniana* is currently known only from foothill to montane forests of the Kosciuszko National Park in the vicinity of Talbingo, and nearby in Crown Land near Batlow, New South Wales. To date it has been recorded only in steeply west- and south-west falling slopes of Devonian geology within an altitude range of 900 to 1050 m. Associated species include *Eucalyptus dalrympleana* Maiden subsp. *dalrympleana*, *E. radiata* subsp. *robertsonii* (Blakely) L.A.S. Johnson & Blaxell, *E. viminalis* Labill. subsp. *viminalis*, *Acacia dealbata* Link subsp. *dealbata*, *A. melanoxylon* R.Br., *Cassinia aculeata* (Labill.) R.Br. subsp. *aculeata*, *C. longifolia* R.Br., *Lomatia myricoides* (C.F. Gaertn.) Domin, *Platylobium montanum* I. Thomps. subsp. *montanum*, *Pteridium esculentum* (G. Forst.) Cockayne subsp. *esculentum*, *Geranium* spp., *Senecio prenanthoides* A. Rich., *Viola hederacea* Labill. Sites may be heavily shaded or rather open. One collection is from a disturbed road verge where occurring with ruderal weeds. Soils are typically rather shallow overlying the rhyolitic parent rock.

Conservation Status: Currently known from only five collections, but at each of those sites locally common to subdominant. The forest type – Community u165 of Armstrong et al. (2013) – is common on the western side of the Australian Alps Bioregion between the Brindabella Ranges to the Geehi Valley and so it would seem likely that the species is more widespread and previously overlooked. Indeed, there are numerous unvouchered records of *P. tenera* from vegetation plots of montane forest in the Talbingo / Bago / Manjar area of western Kosciuszko National Park and adjacent State Forest (NSW Bionet Atlas, <http://www.bionet.nsw.gov.au/>, accessed 19 Sep. 2017), which may represent *P. mireniana*. Given this uncertainty, an appropriate IUCN assessment would be ‘data deficient’ (IUCN Red List of Threatened species, <http://www.iucnredlist.org/technical-documents/categories-and-criteria>, accessed 22 Nov. 2017).

Etymology: The epithet ‘mireniana’ commemorates the Mountain Invasion Research Network (MIREN) under whose auspices the survey work that brought the



Pocket Empty



HOLOTYPE
National Herbarium of Victoria (MEL)

Poa mireniana N.G. Walsh
& K.L. McDougall

Determinavit N.G. Walsh 22-i-2018

NATIONAL HERBARIUM OF VICTORIA (MEL)
MELBOURNE, AUSTRALIA



Poa aff. *tenera* F. Muell. ex Hook. f.
Det.: McDougall, K.L., 5 Jan. 2018

Coll.: McDougall, K.L., 1490 Date: 5 Jan. 2018

Australia: New South Wales

Loc.: Kosciuszko National Park, c. 50 m below Snowy Mtn Hwy, 4 km direct E from Talbingo.
35° 35' 17" S 148° 20' 45" E, Alt.: 900 m.

Habitat: Montane forest. Steep, SW aspect. Shallow, rocky soil.

Associated taxa: *Acrisia dealbata*, *Cassinia aculeata*, *Cassinia longifolia*, *Coprosma hirtella*, *Dichondra repens*, *Eucalyptus radiata* subsp. *robertsonii*, *Legenophora stipitata*, *Leucopogon lanceolatus*, *Lomatium fraseri*, *Microlophus stipitoides*, *Pteridium esculentum*, *Stellaria pungens*, *Viola hederacea*.

Descriptive notes: Rhizomatous perennial with some aerial branching. Leaves flat in vivo.

Collecting notes: Of restricted occurrence, but locally the dominant ground-layer species.

Dupl.: CANB, K, MELU, NSW, US

383. Poaceae - M. Monocots - Main collection (S. Australia 144)
Printed from MELISR, 05 Feb. 2018

TYPE

NATIONAL HERBARIUM OF
VICTORIA (MEL), AUSTRALIA

Figure 1. *Poa mireniana* holotype (K.L. McDougall 1490, MEL). Photo by Angharad Johnson. Reproduced with permission by RBGV.

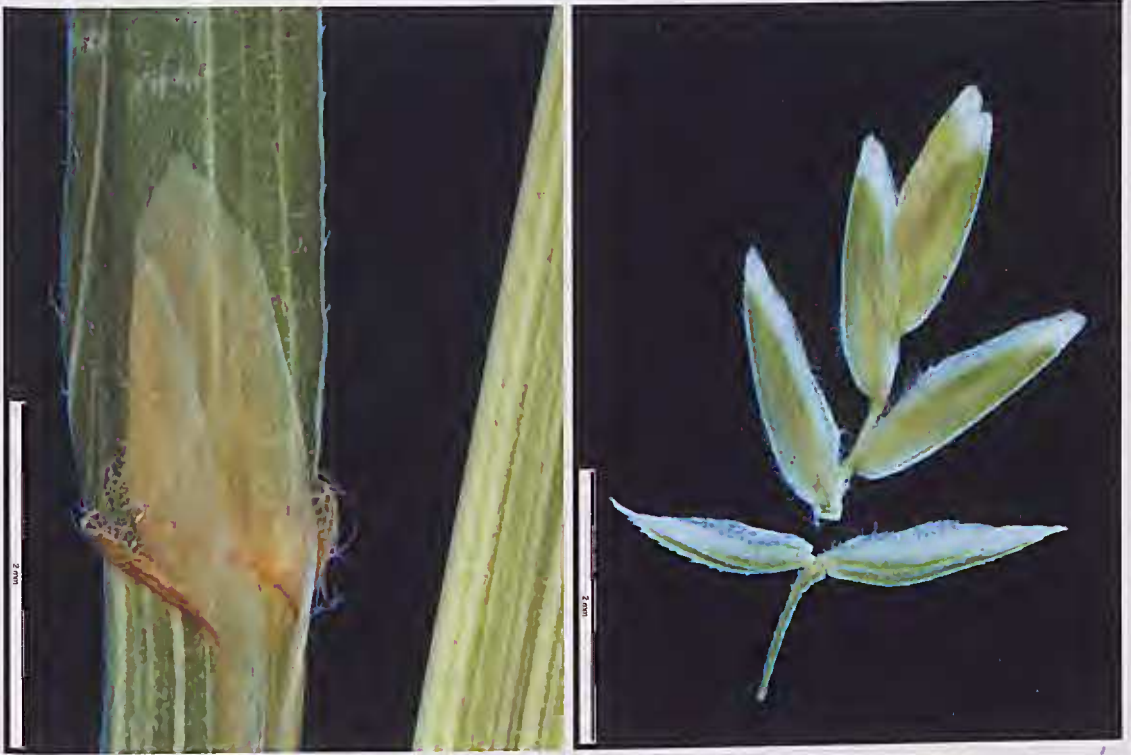


Figure 2. *Poa mireniana* ligule and collar (from Walsh 8732, MEL); scalebar 2 mm. Photo by Ian Clarke.

Figure 3. *Poa mireniana* spikelet, florets separated from glumes (from Walsh 8732, MEL); scalebar 2 mm. Photo by Ian Clarke.

new species to light was carried out. MIREN is a global affiliation of botanists undertaking comparative surveys in mountains around the world to record 'invasions' into mountain floras as a consequence of direct and indirect human activities. For further information about MIREN, see <http://www.mountaininvasions.org/>.

Notes: The overall appearance of *P. mireniana*, in particular, its stoloniferous or rhizomatous habit and predominantly cauline leaves, suggests a taxonomic proximity to *P. tenera* F.Muell. ex Hook.f., a species mostly of moist, shaded, lowland to montane forests of south-eastern Australia. The long ligules, conspicuous collar, short, broad and generally adaxially scabrous leaves, contracted inflorescences and spikelets with more numerous florets of *P. mireniana* suggest that the similarity to *P. tenera*, which does not possess these characters, may be superficial only.

Regarding *P. tenera*, Vickery (1970) noted 'some difficulty has been experienced in comprehending the limits of *P. tenera* and there is no doubt that further field studies are required'. She emphasised the presence of

'slender smooth leaves and distinctly membranous ligules' as being characteristic features of *P. tenera*, while noting collectors' comments that 'it may display a tussocky phase'. To date, *P. mireniana* has not been observed as a tussock. Vickery described the ligule of *P. tenera* as being 0.5–1.5 mm long, while Walsh et al. (2009) applying a stricter circumscription of the species give a measurement of 0.3–0.4 mm long. Since Vickery's 1970 treatment of *Poa* in Australia, at least two species probably referable to *P. tenera* in her circumscription of the species, have been described — *P. amplexicaulis* C.M.Weiller & Stajsic and *P. orthoclada* N.G.Walsh, both of which have longer ligules than described by Walsh et al. (2009), but generally shorter than those of *P. mireniana*. Unlike *P. mireniana*, both these species are caespitose, although sometimes with short ascending stolons, and have distinctly pigmented leaf sheaths and smooth, folded to inrolled leaves. Their segregation from *P. tenera* at least partially explains the discrepancies between the two accounts. If Vickery had seen any specimens of *P. mireniana*, it is possible that she would have included

them within her concept of *P. tenera* and these, plus the two more recently named species would account for her 'difficulty in comprehending the limits' of the species. As her range of leaf width (1–1.5 mm) is below that of *P. mireniana* (1.5–3 mm), it also suggests that she did not examine any specimens now referable to *P. mireniana*. As well as the leaves of *P. mireniana* being broader, their texture is coarser than that of *P. tenera* which, on herbarium specimens, typically has leaf blades thinly membranous, often almost translucent between the relatively prominent veins, of which there are fewer than in *P. mireniana*.

Acknowledgements

We are grateful to Genevieve Wright (Office of Environment and Heritage, New South Wales) for assistance in the field and to Angharad Johnson and Ian Clarke (both MEL) for the production of figures. The continuing enthusiasm and support of our MIREN colleagues is greatly appreciated.

References

- Armstrong, R.C., Turner, K.D., McDougall, K.L., Rehwinkel R. and Crooks, J.I. (2013). Plant communities of the upper Murrumbidgee catchment in New South Wales and the Australian Capital Territory. *Cunninghamia* **13**, 125-266.
- Kueffer, C., Daehler, C., Dietz, H., McDougall, K., Parks, C., Pauchard, A., Rew, L. and MIREN Consortium (2014). The Mountain Invasion Research Network (MIREN): linking local and global scales for addressing an ecological consequence of global change. *Gaia* **23**, 263-265.
- Vickery, J.W. (1970). A taxonomic study of the genus *Poa* L. in Australia. *Contributions from the New South Wales Notional Herbarium* **4(4)**, 145-243.
- Walsh, N.G., Weiller, C.M. & Thompson, I.R. (2009). *Poa* in A. Wilson (ed.), *Flora of Australia*, vol. 44A, Poaceae 2, ABRIS/CSIRO, Melbourne.